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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/062,507	02/05/2002	Seoung Keun Ahn	2950-0202P	2749
2292	7590	08/18/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH			KUMAR, PANKAJ	
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FALLS CHURCH, VA 22040-0747			PAPER NUMBER	
			2631	

DATE MAILED: 08/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/062,507	<b>Applicant(s)</b> AHN ET AL.	
	<b>Examiner</b> Pankaj Kumar	<b>Art Unit</b> 2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 2/5/2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,6,7 and 12-18 is/are rejected.
- 7) ☒ Claim(s) 2,4,5 and 8-11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

1. Claims 1 (and its dependent claims), 15 are objected to because of the following informalities:

a. Claim 1 and its dependent claims are objected to since the first recitation of “the length” should probably be ‘a length’.

b. Claim 15 is objected to since “the second sync pattern” has not being defined earlier.

2. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 6, 7, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi USPN 6,121,902 in view of Smith USPN 6,747,977. Here is how the references teach the claims:

5. As per claim 1: What is claimed is: method of inserting sync patterns in modulated data, comprising the steps of: (a) receiving modulated channel data (Kobayashi fig. 1: modulates data onto disc; fig. 6: 154 receives modulated data; col. 7 lines 58, 66: channel); (b) identifying a frame sequence (Kobayashi col. 7 lines 6-10: “corresponding to the output data ... is particular pattern information”) of each frame-constituting channel data in a sector (Kobayashi fig. 1: disc

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2 has sectors which have frames as frame synchronization is occurring in col. 7 line 9); and (c) inserting a sync pattern in the channel data (Kobayashi col. 7 lines 3-12; fig. 1: output of 51 being inserted into channel data), the length of the sync pattern varying based on the identified frame sequence (not in Kobayashi but would be obvious as explained below).

6. Kobayashi does not teach the length of the sync pattern varying based on the identified frame sequence. Smith teaches the length of the sync pattern varying based on the identified frame sequence (Smith fig. 3: 50 - interrogate packet length requirement; fig. 3: 52, 54 - generate packet length indicator based on length requirement and packetise data including packet length indicator). Thus, it would have been obvious, to one of ordinary skill in the art, at time the invention was made, to arrive at the inserting a sync pattern in the channel data, the length of the sync pattern varying based on the identified frame sequence as recited by the instant claims, because the combined teaching of Kobayashi with Smith suggest the length of the sync pattern varying based on the identified frame sequence as recited by the instant claims. Furthermore, one of ordinary skill in the art, would have been motivated to combine the teachings of Kobayashi with Smith because Kobayashi suggests frame synchronization (Kobayashi col. 7 line 9) (something broad) in general and Smith suggests the beneficial use of varying the synchronization pattern length such as optimizing to enhance data through put and have acceptable quality of service (Smith col. 5 lines 19-31) in the analogous art of synchronization.

7. As per claim 3: The method of claim 2, wherein the first sync pattern consists d zeros, one, (k+3) zeros, one, and d zeros when (d, k) constraints are given (not in Kobayashi in view of Smith but would be obvious as explained below). Kobayashi in view of Smith does not teach exactly this sync pattern. It is common knowledge to use different synchronous patterns. Thus,

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it would have been obvious, to one of ordinary skill in the art, at time the invention was made, to modify the prior art teaching of Kobayashi in view of Smith with the specific sync pattern recited by the instant claims, because Kobayashi in view of Smith suggests a general sync pattern in the analogous art of synchronizing.

8. As per claim 6: The method of claim 1, wherein the sync pattern has 0's run longer than k when (d,k) constraints are given (not in Kobayashi in view of Smith but would be obvious as explained below). Kobayashi in view of Smith does not teach exactly this sync pattern. It is common knowledge to use different synchronous patterns. Thus, it would have been obvious, to one of ordinary skill in the art, at time the invention was made, to modify the prior art teaching of Kobayashi in view of Smith with the specific sync pattern recited by the instant claims, because Kobayashi in view of Smith suggests a general sync pattern in the analogous art of synchronizing.

9. As per claim 7: A recording device comprising modulated data sectors constituting a data block (Kobayashi fig. 1: 3, 13; fig. 5), the modulated data containing sync patterns (Kobayashi fig. 1: 51) which are added every frame-constituting data (Kobayashi col. 7 lines 3-12) the length of the sync pattern varying based on frame sequence of corresponding frame-constituting data unit in a sector (not in Kobayashi but would be obvious as explained below). Kobayashi does not teach the length of the sync pattern varying based on frame sequence of corresponding frame-constituting data unit in a sector.

10. Kobayashi does not teach the length of the sync pattern varying based on the identified frame sequence. Smith teaches the length of the sync pattern varying based on the identified frame sequence (Smith fig. 3: 50 - interrogate packet length requirement; fig. 3: 52, 54 –

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generate packet length indicator based on length requirement and packetise data including packet length indicator). Thus, it would have been obvious, to one of ordinary skill in the art, at time the invention was made, to arrive at the inserting a sync pattern in the channel data, the length of the sync pattern varying based on the identified frame sequence as recited by the instant claims, because the combined teaching of Kobayashi with Smith suggest the length of the sync pattern varying based on the identified frame sequence as recited by the instant claims. Furthermore, one of ordinary skill in the art, would have been motivated to combine the teachings of Kobayashi with Smith because Kobayashi suggests frame synchronization (Kobayashi col. 7 line 9) (something broad) in general and Smith suggests the beneficial use of varying the synchronization pattern length such as optimizing to enhance data through put and have acceptable quality of service (Smith col. 5 lines 19-31) in the analogous art of synchronization.

11. As per claim 12: The recording device of claim 7, wherein the sync pattern has run longer than  $k$  when  $(d,k)$  constraints are given (not in Kobayashi in view of Smith but would be obvious as explained below). Kobayashi in view of Smith does not teach exactly this sync pattern. It is common knowledge to use different synchronous patterns. Thus, it would have been obvious, to one of ordinary skill in the art, at time the invention was made, to modify the prior art teaching of Kobayashi in view of Smith with the specific sync pattern recited by the instant claims, because Kobayashi in view of Smith suggests a general sync pattern in the analogous art of synchronizing.

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12. Claims 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi USPN 6,121,902 in view of Fujiwara USPN 6,757,231. Here is how the references teach the claims:

13. As per claim 13: A method of inserting sync patterns modulated data, comprising the steps receiving modulated channel data (Kobayashi fig. 1: modulates data onto disc; fig. 6: 154 receives modulated data; col. 7 lines 58, 66: channel); inserting either of a sector sync pattern and a frame sync pattern in the channel data at intervals (Kobayashi col. 7 lines 3-12: inherent for frame sync signal to be at intervals of frames), wherein the length sector sync pattern is different from that of the frame sync pattern (not in Kobayashi but would be obvious as explained below). Kobayashi does not teach wherein the length sector sync pattern is different from that of the frame sync pattern. Fujiwara 6757231 teaches wherein the length sector sync pattern is different from that of the frame sync pattern (Fujiwara col. 3 lines 3-5). Thus, it would have been obvious, to one of ordinary skill in the art, at time the invention was made, to arrive at the wherein the length sector sync pattern is different from that of the frame sync pattern as recited by the instant claims, because the combined teaching of Kobayashi with Fujiwara suggest wherein the length sector sync pattern is different from that of the frame sync pattern as recited by the instant claims. Furthermore, one of ordinary skill in the art, would have been motivated to combine the teachings of Kobayashi with Fujiwara because Kobayashi suggests a lengths of a frame sync pattern being 11T (Kobayashi col. 7 line 9) (something broad) in general and Fujiwara suggests the beneficial use of sector and frame sync patterns being different lengths such as sectors are longer than frames and thus they require longer sync lengths than frames in the analogous art of synchronization.

14. As per claim 14: The method of claim 13 wherein the sector sync pattern is longer than the frame sync pattern (not in Kobayashi but would be obvious as explained below). Kobayashi does not teach wherein the length sector sync pattern is longer from that of the frame sync pattern. Fujiwara 6757231 teaches wherein the length sector sync pattern is longer from that of the frame sync pattern (Fujiwara col. 3 lines 3-5). Thus, it would have been obvious, to one of ordinary skill in the art, at time the invention was made, to arrive at the wherein the length sector sync pattern is longer from that of the frame sync pattern as recited by the instant claims, because the combined teaching of Kobayashi with Fujiwara suggest wherein the length sector sync pattern is longer from that of the frame sync pattern as recited by the instant claims.

Furthermore, one of ordinary skill in the art, would have been motivated to combine the teachings of Kobayashi with Fujiwara because Kobayashi suggests a lengths of a frame sync pattern being 11T (Kobayashi col. 7 line 9) (something broad) in general and Fujiwara suggests the beneficial use of sector and frame sync patterns being longer such as sectors are longer than frames and thus they require longer sync lengths than frames in the analogous art of synchronization.

15. As per claim 15: The method of claim longer than the second sync pattern by 2 bits (Fujiwara col. 3 lines 3-5: frame sync is 1 bit and sector sync is 3 bits).

16. As per claim 16. The method of claim 13, sync pattern consists of d zeros, one, (k+3) zeros, one, and d zeros when (d,k) constraints are given (not in Kobayashi in view of Fujiwara but would be obvious as explained below). Kobayashi in view of Fujiwara does not teach exactly this sync pattern. It is common knowledge to use different synchronous patterns. Thus, it would have been obvious, to one of ordinary skill in the art, at time the invention was made, to



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modify the prior art teaching of Kobayashi in view of Fujiwara with the specific sync pattern recited by the instant claims, because Kobayashi in view of Fujiwara suggests a general sync pattern in the analogous art of synchronizing.

17. As per claim 17: The method of claim 13, wherein the frame sync pattern consists of  $d$  zeros, one,  $(k+1)$  zeros, one, and  $d$  zeros when  $(d,k)$  constraints are given (not in Kobayashi in view of Fujiwara but would be obvious as explained below). Kobayashi in view of Fujiwara does not teach exactly this sync pattern. It is common knowledge to use different synchronous patterns. Thus, it would have been obvious, to one of ordinary skill in the art, at time the invention was made, to modify the prior art teaching of Kobayashi in view of Fujiwara with the specific sync pattern recited by the instant claims, because Kobayashi in view of Fujiwara suggests a general sync pattern in the analogous art of synchronizing.

18. As per claim 18. The method of claim 13, wherein the sector sync pattern and the frame sync pattern have 0's run longer than  $k$ , respectively when  $(d,k)$  constraints are given (not in Kobayashi in view of Fujiwara but would be obvious as explained below). Kobayashi in view of Fujiwara does not teach exactly this sync pattern. It is common knowledge to use different synchronous patterns. Thus, it would have been obvious, to one of ordinary skill in the art, at time the invention was made, to modify the prior art teaching of Kobayashi in view of Fujiwara with the specific sync pattern recited by the instant claims, because Kobayashi in view of Fujiwara suggests a general sync pattern in the analogous art of synchronizing.

***Allowable Subject Matter***

19. Claims 2, 4, 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim

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and any intervening claims and rewritten to overcome the objection in the claim objection section.


20. Claims 8, 9, 10, 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### *Conclusion*

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pankaj Kumar whose telephone number is (571) 272-3011. The examiner can normally be reached on Mon, Tues, Thurs and Fri after 8AM to after 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Pankaj Kumar  
Patent Examiner  
Art Unit 2631

PK